

TOP SECRET**OUT59133****TOP SECRET 182047Z CITE****7796****1966 JUL 18 21 07Z****25X1****25X1**

**SUBJ: EVALUATION OF KODAK SPECIAL HIGH DEFINITION AERIAL
FILM (SO-362) USED ON MISSION 4029**

**1. A SUBJECTIVE APPRAISAL OF THE SO-362 USED ON REVOLUTIONS
95 AND 96 INDICATES THAT THE NEGATIVES ARE OF A HIGHER DENSITY
LEVEL THAN 3404 NEGATIVES USUALLY PROVIDE. THE MAJORITY OF
PHOTOGRAPHY RECORDED ON SO-362 ACQUIRED ON THIS MISSION IS
CLOUD COVERED. A COMPARISON WAS MADE BETWEEN REV 95 FRAME 3
FROM MISSION 4029 AND REV 30 FRAME 13 FROM MISSION 4028
WHICH COVER THE SAME AREA. ALTHOUGH THE FOLLOWING DISSIMILAR-
ITIES EXIST CERTAIN DEDUCTIONS COULD BE MADE.**

FILM TYPE	3404	SO-362
REV	30	95
MISSION	4028	4029
CONE ANGLE	18 DEGREES	42 DEGREES
FILM VELOCITY	3.4496"/SEC	2.6369"/SEC
ALTITUDE	86.133 NM	85.735 NM
SOLAR ELEVATION	67.5 DEGREES	74.7 DEGREES
SOLAR AZIMUTH	89.4 DEGREES	77.5 DEGREES
VEHICLE AZIMUTH	201.9 DEGREES	176.8 DEGREES
SLIT WIDTH	0.0085"	0.0048"

19 JUL 1966**DISTRIBUTION**

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WAGNER BOOBY

25X1**TOP SECRET**

GROUP 1
Excluded from automatic
downgrading and
declassification

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DATE	16 MAY 1966	9 JUNE 1966
VEHICLE ROLL ANGLE	7.779 DEGREES	-43.249 DEGREES
SCALE	86,200	111,000
DEVELOPMENT LEVEL	FULL	FULL
PROCESSOR	YARDLEIGH	TRENTON
ATMOSPHERIC CONDITIONS	CAT 2	CAT 3
AERIAL EXPOSURE INDEX	8.0	3.7
RMS GRANULARITY	0.018	0.023
RESOLVING POWER 1000:1	475 L/MM	375 L/MM
1.6:1	200 L/MM	200 L/MM

2. TARGETS SCRUTINIZED BY INTERPRETERS AND TECHNICAL ANALYSTS TOGETHER WITH 100X MAGNIFICATIONS SUBSTANTIATE THE FOLLOWING DEDUCTIONS:

A. THE RESOLUTION OF THE SO-362 IS LESS THAN HALF THE RESOLUTION OF TYPE 3404 ON THE FRAMES COMPARED.

B. THE COARSER GRAIN STRUCTURE OF THE SO-362 MAY ACCOUNT FOR SOME LOSS IN RESOLUTION.

C. A SLIGHT VEHICLE INDUCED SMEAR IN THE SO-362 IMAGERY ACCOUNTS FOR SOME LOSS OF RESOLUTION.

D. THE SO-362 IMAGERY IS NOT ADEQUATE FOR MAGNIFICATIONS IN EXCESS OF 30X. THE "GRAININESS" CAUSES A LOSS IN DETAIL AT HIGH MAGNIFICATION.

E. REPRODUCTIONS OF SO-362 ON 8430 ARE TYPICAL. THE GRAIN STRUCTURE OF THE ORIGINAL IS NOT COMPOUNDED

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WITH THE GRAIN OF THE REPRODUCTIONS.

3. THE OBLIQUITY AND SCALE OF THE TWO FRAMES COMPARED ARE QUITE DISSIMILAR. SUFFICIENT MATERIAL IS NOT AVAILABLE FOR A MORE COMPREHENSIVE STUDY. AN INTERIM EVALUATION BASED UPON THIS TEST INDICATES THAT THE SO-362 DOES NOT ADEQUATELY PROVIDE THE RESOLUTION REQUIRED BY THE INTELLIGENCE COMMUNITY.

THE INADEQUACIES ARE ATTRIBUTED TO:

- A. SCALE OF IMAGERY EVALUATED
- B. IMAGE MOTION
- C. GRAIN STRUCTURE
- D. LESS THAN OPTIMUM EXPOSURE

4. IT IS RECOMMENDED THAT ADDITIONAL TESTS BE CONDUCTED BEFORE SPECIFIC CONCLUSIONS BE DETERMINED.

T O P S E C R E T

-END OF MESSAGE-